

REMARKS

Reexamination and reconsideration of this application, as amended, is requested. Claims 1-14 and 16-25 remain in the application and claim 16 has been amended as indicated above.

Applicants believe there is no charge for this response as no new claims have been added.

Support for Amendments

As indicated above, claim 16 has been amended to correct an inadvertent grammatical error.

Applicants respectfully submit that no new matter has been added.

Response to the 35 U.S.C. §112, Second Paragraph, Rejection

The Office Action rejects claim 16 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which they regard as the invention. The claim has been amended to overcome the rejection as requested by the Office Action.

Response to the 35 U.S.C. §103(a) Rejection

The Office Action also rejects claims 1-14 and 17-25 under 35 U.S.C. §103(a) as being unpatentable over Takahara et al. (US Patent 5,436,635) in view of Shields (US Patent 4,870,396). Applicants respectfully traverse this rejection in view of the remarks that follow.

1) THE PROPOSED MODIFICATION OF SHIELDS WOULD RENDER THE STRUCTURE OF TAKAHARA ET AL. UNSATISFACTORY FOR ITS INTENDED PURPOSE

As discussed in M.P.E.P. §2143.01, if a proposed modification would render the device shown in the cited patent being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The Office Action indicated that the structure shown in Takahara et al. fails to teach voltage signal storage elements. However, according to the Office Action, Takahara et al. could be modified to include voltage storage elements shown in Shields because the modification would provide a sample and hold circuit as taught by Shields and facilitate storage of video signal. However, Applicants respectfully submit that the combination of Takahara et al. and Shields cannot make Applicants' claimed invention obvious because the teachings of Shield would

render the structure taught in Takahara et al. unsatisfactory for its intended purpose.

For example, Takahara et al. makes clear that the circuit shown in FIG. 2 includes pixel electrodes P_{ij} that store video signals of positive and negative polarity. Modification of this using the storage elements of Shields would destroy the operation of the device taught by Takahara et al.

At column 1, line 55, through column 2, line 29, Takahara et al. state:

" Referring to FIG. 25, reference numeral 251 denotes an amplifier for amplifying a video signal to a specified value, while reference numeral 252 denotes a phase division circuit for generating a video signal of positive polarity and negative polarity. It is herein noted that the positive polarity means an electric potential higher than the electric potential at the opposite electrode (referred to as the "common voltage" hereinafter) while the negative polarity means an electric potential lower than the electric potential at the opposite electrode. Reference numeral 253 denotes an output changeover circuit for outputting an AC video signal which is inverted in polarity every one field (1F) or every one horizontal scanning line (1H). Reference numeral 254 denotes an LCD panel, and reference numeral 255 denotes a drive IC control circuit for effecting synchronization and control of the source drive IC 232 and the gate drive IC 231.

The following describes the operations of the drive circuit shown in FIG. 25 of the conventional display device. First in the amplifier 251, a gain adjustment is effected so that the amplitude of a video signal corresponds to the electric and optical characteristics of the liquid crystals. Then the video signal which has undergone the gain adjustment is input to the phase division circuit 252 to yield two output video signals, one in positive polarity and the other in negative polarity with respect to the common voltage of the opposite electrode. The video signals of positive and negative polarities are input to the output changeover circuit 253, and the output changeover circuit 253 outputs a video signal which is inverted in polarity every one field (1F) or every one horizontal scanning cycle (1H). The reason why the video signal is inverted in polarity is to apply an AC voltage to the liquid crystals because the liquid crystals are decomposed to be deteriorated when receiving a DC voltage. Then a video signal from the output changeover circuit 253 is input to the source drive IC 232, and the source drive IC 232 applies a sampled video signal to the source signal line of the LCD panel 254 in synchronization with the gate drive IC 231 according to a control signal transmitted from the drive IC control circuit 255." (emphasis added)

Then at column 2, lines 59-64, "First, an on-voltage is applied to a gate signal line G.sub.1 from the gate drive IC 231, and an off-voltage is applied to the other gate signal lines G.sub.2 through G.sub.m. In the above case, each T.sub.1j

of the TFTs on the first row is turned on so that the signal V.sub.+ output on a source signal line S.sub.j applied from the source drive IC 232 is input to each pixel electrode P.sub.1j arranged on the first row."

Takahara et al. then repeatedly goes on to state the required operation of the pixels. "The source drive IC for driving each pixel is required to output the signals of +V.sub.m and -V.sub.m as shown in FIG. 24. (column 15, lines 17-19, emphasis added) "As shown in FIG. 5, the SIC (P) 11 takes charge of the video signal in positive polarity, while the SIC (M) 12 takes charge of the video signal in negative polarity as described before. Therefore, with regard to each SIC, each SIC outputs only a video signal either in positive or negative polarity. In other words, the resulting signal amplitude can be reduced to half of that of the conventional SIC." (column 15, lines 7-15, emphasis added)

Clearly the proposed modification of using the voltage storage elements of Shields would destroy the operation of the devices taught by Takahara et al. unsatisfactory for its intended purpose. Therefore, Applicants respectfully submit that the combination of Takahara et al. and Shields cannot make Applicants' claims 1-14 and 16-25 obvious, because the modification proposed in the Office Action would make the structure of Takahara et al. unsatisfactory for its intended purpose. Thus, there can be no motivation to combine the references as suggested in the

Office Action. Accordingly, Applicants respectfully traverse the rejection of claims 1-14 and 16-25 in view of the combination of Takahara et al. and Shields.

PATENT APPLICATION

042390.P5271

Conclusion

The foregoing is submitted as a full and complete response to the Office Action mailed July 2, 2003, and it is submitted that claims 1-14 and 16-25 are in condition for allowance. Reconsideration of the rejection is requested. Allowance of claims 1-14 and 16-25 is earnestly solicited.

Should it be determined that an additional fee is due under 37 CFR §§1.16 or 1.17, or any excess fee has been received, please charge that fee or credit the amount of overcharge to deposit account #02-2666.

If the Examiner believes that there are any informalities which can be corrected by an Examiner's amendment, a telephone call to the undersigned at (480) 554-9732 is respectfully solicited.

Respectfully submitted,

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15
14

PATENT APPLICATION

042390.P5271

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16

15